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Reviewer: Durreshwar Anjum

Timestamp: [year=2008; month=1; day=7; hr=14; min=9; sec=35; ms=111;]

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Application No: 10588286 Version No: 1.0

Input Set:

Output Set:

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Finished: 2007-12-17 12:38:05.580
Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 681 ms
Total Warnings: 6
Total Errors: 0
No. of SeqIDs Defined: 13
Actual SeqID Count: 13

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SEQUENCE LISTING

<110> DEKISHIMA, YASUKATA
KAWABATA, HIROSHI
HIRAOKA, HIROTOSHI
UEDA, MAKOTO
UEHARA, HISATOHSI

<120> METHOD FOR PRODUCING ALCOHOL AND CARBOXYLIC ACID
HAVING OPTICAL ACTIVITY

<130> P30416

<140> 10588286

<141> 2007-12-17

<150> PCT/JP05/02093

<151> 2005-02-04

<150> JP 027815/2004

<151> 2004-02-04

<150> JP 147023/2004

<151> 2004-04-13

<160> 13

<170> PatentIn Ver. 3.3

<210> 1

<211> 345

<212> PRT

<213> Issatchenkia scutulata

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Thr	Ala	Arg	Ser	Gln	Ser	Lys	Tyr	Gln	Pro	Ile	Leu	Asp	Ala	Phe	Lys
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Lys	Lys	Tyr	Pro	Asp	Ala	Asn	Leu	Thr	Phe	Glu	Val	Val	Pro	Asp	Ile
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Thr	Ala	Val	Leu	His	Thr	Ala	Ser	Pro	Phe	Ser	Phe	Gly	Leu	Asn	Lys
			85						90					95	

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		145				150				155				160				
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			165						170					175				
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			260					265				270						
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Gly	Lys	Val	Ala	Leu	Gly	Asp	Pro	Ala	Ser	Glu	Lys	Glu	Leu	Ile	Glu			
		290				295					300							
Lys	His	Thr	Asp	Lys	Tyr	Asp	Leu	Thr	Asn	Leu	His	Asn	Val	Ile	Gly			
		305			310				315					320				
Lys	Tyr	Asp	Phe	Ile	Pro	Val	Glu	Lys	Ser	Val	Val	Asp	Val	Leu	Glu			
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<213> Issatchenkia scutulata

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caaccaatcc ttgatgcttt caagaaaaaa taccctgatg caaatttgac ttttgaagtt 180
gtccctgaca tctccactga aaacgcattc gatgatgttt tgaagaagca tccagaaatt 240
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gcatatttga agcctgccgt tgatggtagt ttgaatatcc tcaaggcaat tgagaagtat 360
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ccaagtcattg tccacaccag tgaaacctgg aacccaatta attgggaaaa cgatgtgaag 480
aatgaatact ttgcatatat tgcctccaag acgtatgctg aaaaagctgc gagagatttt 540
gtcaaggagc ataagggtcaa tttcaagtta gcaactgtta acccaccata cgttctgggt 600
ccacaattat ttgactttctc agttgggtcca gtcttgaaca cttccaacca attgatcacg 660
gatgcgacta aaattgataa gaactctact aagccggaat taggtacacc agcttttagca 720
gtcgatgtta gagatgttgc tgcgttccat gttttaccat tggaagatga taaagttgca 780
agtgaaagat tattttattgt tgctgggtcca gcagttgttc aaacattctt aaacatcatc 840
aacgagaaca ttccagaact taaaggtaag gttgccctag gagatccagc ttcagagaag 900
gagttgattg aaaagcacac agataagtat gatttgacaa atcttcacaa cgttatttgt 960
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<212> PRT

<213> *Saccharomyces cerevisiae*

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Val Arg Ser His Glu Lys Glu Ala Lys Leu Leu Arg Gln Phe Gln His
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Asn Pro Asn Leu Thr Leu Glu Ile Val Pro Asp Ile Ser His Pro Asn
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Ala Phe Asp Lys Val Leu Gln Lys Arg Gly Arg Glu Ile Arg Tyr Val
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Leu His Thr Ala Ser Pro Phe His Tyr Asp Thr Thr Glu Tyr Glu Lys
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Asp Leu Leu Ile Pro Ala Leu Glu Gly Thr Lys Asn Ile Leu Asn Ser
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Ser Cys Thr Ala Ile Ile Thr Leu Ala Lys Met Asp Asp Pro Ser Val
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Leu Thr Thr Val Asn Pro Ser Leu Leu Phe Gly Pro Gln Leu Phe Asp
195 200 205

Glu Asp Val His Gly His Leu Asn Thr Ser Cys Glu Met Ile Asn Gly
210 215 220

Leu Ile His Thr Pro Val Asn Ala Ser Val Pro Asp Phe His Ser Ile
225 230 235 240

Phe Ile Asp Val Arg Asp Val Ala Leu Ala His Leu Tyr Ala Phe Gln
245 250 255

Lys Glu Asn Thr Ala Gly Lys Arg Leu Val Val Thr Asn Gly Lys Phe
260 265 270

Gly Asn Gln Asp Ile Leu Asp Ile Leu Asn Glu Asp Phe Pro Gln Leu
275 280 285

Arg Gly Leu Ile Pro Leu Gly Lys Pro Gly Thr Gly Asp Gln Val Ile
290 295 300

Asp Arg Gly Ser Thr Thr Asp Asn Ser Ala Thr Arg Lys Ile Leu Gly
305 310 315 320

Phe Glu Phe Arg Ser Leu His Glu Ser Val His Asp Thr Ala Ala Gln
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Ile Leu Lys Lys Glu Asn Arg Leu
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<213> Issatchenkia scutulata

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Asp Ile

<210> 5

<211> 15

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agttgtccct gacatctcca ctgaaaacgc attcgatgat gttttgaaga agcatccaga 180
aattactgct gtccttcaca cagcatctcc attctctttt ggtttgaaca aggatctgaa 240
ggaagcatat ttgaagcctg ccgttgatgg tactttgaat attctcaagg caattgagaa 300
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<211> 28

<212> DNA

<213> Artificial Sequence

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28

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31

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Ser Asn Lys Thr Val Leu Val Thr Gly Ala Thr Gly Phe Ile Ala Leu	
5 10 15	
cac atc att gat aat tta ttg tct aag ggt tat tcc gtt att ggt aca	153
His Ile Ile Asp Asn Leu Leu Ser Lys Gly Tyr Ser Val Ile Gly Thr	
20 25 30	
gct aga tcc caa tct aaa tat caa cca atc ctt gat gct ttc aag aaa	201
Ala Arg Ser Gln Ser Lys Tyr Gln Pro Ile Leu Asp Ala Phe Lys Lys	
35 40 45	
aaa tac cct gat gca aat ttg act ttt gaa gtt gtc cct gac atc tcc	249
Lys Tyr Pro Asp Ala Asn Leu Thr Phe Glu Val Val Pro Asp Ile Ser	
50 55 60 65	
act gaa aac gca ttc gat gat gtt ttg aag aag cat cca gaa att act	297
Thr Glu Asn Ala Phe Asp Asp Val Leu Lys Lys His Pro Glu Ile Thr	
70 75 80	
gct gtc ctt cac aca gca tct cca ttc tct ttt ggt ttg aac aag gat	345
Ala Val Leu His Thr Ala Ser Pro Phe Ser Phe Gly Leu Asn Lys Asp	
85 90 95	
ctg aag gaa gca tat ttg aag cct gcc gtt gat ggt act ttg aat att	393
Leu Lys Glu Ala Tyr Leu Lys Pro Ala Val Asp Gly Thr Leu Asn Ile	
100 105 110	
ctc aag gca att gag aag tat gca cca cag gtt act aaa gtt gtt atc	441
Leu Lys Ala Ile Glu Lys Tyr Ala Pro Gln Val Thr Lys Val Val Ile	
115 120 125	
aca tct tct tat gct gca att atg aca ggt aat cca agt cat gtc cac	489
Thr Ser Ser Tyr Ala Ala Ile Met Thr Gly Asn Pro Ser His Val His	
130 135 140 145	
acc agt gaa acc tgg aac cca att aat tgg gaa aac gat gtg aag aat	537
Thr Ser Glu Thr Trp Asn Pro Ile Asn Trp Glu Asn Asp Val Lys Asn	
150 155 160	
gaa tac ttt gca tat att gcc tcc aag acg tat gct gaa aaa gct gcg	585
Glu Tyr Phe Ala Tyr Ile Ala Ser Lys Thr Tyr Ala Glu Lys Ala Ala	
165 170 175	
aga gat ttt gtc aag gag cat aag gtc aat ttc aag tta gca act gtt	633
Arg Asp Phe Val Lys Glu His Lys Val Asn Phe Lys Leu Ala Thr Val	
180 185 190	
aac cca cca tac gtt ctg ggt cca caa tta ttt gac ttc tca gtt ggt	681
Asn Pro Pro Tyr Val Leu Gly Pro Gln Leu Phe Asp Phe Ser Val Gly	
195 200 205	
cca gtc ttg aac act tcc aac caa ttg atc acg gat gcg act aaa att	729
Pro Val Leu Asn Thr Ser Asn Gln Leu Ile Thr Asp Ala Thr Lys Ile	

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Asp Lys Asn Ser Thr Lys Pro Glu Leu Gly Thr Pro Ala Leu Ala Val				
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Asp Val Arg Asp Val Ala Ala Phe His Val Leu Pro Leu Glu Asp Asp				
245		250	255	
aaa gtt gca agt gaa aga tta ttt att gtt gct ggt cca gca gtt gtt				873
Lys Val Ala Ser Glu Arg Leu Phe Ile Val Ala Gly Pro Ala Val Val				
260		265	270	
caa aca ttc tta aac atc atc aac gag aac att cca gaa ctt aaa ggt				921
Gln Thr Phe Leu Asn Ile Ile Asn Glu Asn Ile Pro Glu Leu Lys Gly				
275		280	285	
aag gtt gcc cta gga gat cca gct tca gag aag gag ttg att gaa aag				969
Lys Val Ala Leu Gly Asp Pro Ala Ser Glu Lys Glu Leu Ile Glu Lys				
290		295	300	305
cac aca gat aag tat gat ttg aca aat ctt cac aac gtt att ggt aaa				1017
His Thr Asp Lys Tyr Asp Leu Thr Asn Leu His Asn Val Ile Gly Lys				
310		315	320	
tat gat ttc att cca gtt gaa aag tcc gtt gtc gac gtc tta gaa caa				1065
Tyr Asp Phe Ile Pro Val Glu Lys Ser Val Val Asp Val Leu Glu Gln				
325		330	335	
tat tac aaa atc aat aaa att gat tagtttatat agaaaatttt atagctaaag				1119
Tyr Tyr Lys Ile Asn Lys Ile Asp				
340		345		
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primer

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